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Attorney Docket No.: 200313908-1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Inventor(s):** Michael T. ROEDER **Confirmation No.:** 4688

**Serial No.:** 10/633,444 **Examiner:** Kan YUEN

**Filed:** August 1, 2003 **Group Art Unit:** 2416

**Title:** AUTOMATED ROUTER LOAD BALANCING

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF - PATENTS**

Sir:

This is an Appeal Brief in connection with the decisions of the Examiner in a Final Office Action mailed October 1, 2009, and in connection with the Notice of Appeal filed on January 4, 2010.

It is respectfully submitted that the present application has been at least twice rejected.

Each of the topics required in an Appeal Brief and a Table of Contents are presented herewith and labeled appropriately.

## TABLE OF CONTENTS

(1)	Real Party in Interest .....	3
(2)	Related Appeals And Interferences.....	3
(3)	Status of Claims .....	3
(4)	Status of Amendments.....	3
(5)	Summary of Claimed Subject Matter .....	3
(6)	Grounds of Rejection to be Reviewed on Appeal.....	9
(7)	Arguments .....	11
	A. The rejection of claim 7 under 35 U.S.C. §112, second paragraph will be corrected upon conclusion of the Appeal.....	11
	B. The rejection of claims 1, 4, 6, 7, and 13-16 under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta, and further in view of Li should be reversed.....	11
	C. The rejection of claims 2, 3, and 8-10 under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and further in view of Deering should be reversed. ....	18
	D. The rejection of claims 5, 11, and 12 under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and further in view of Wiryaman should be reversed. ....	19
	E. The rejection of claims 17-19, 21 and 23 under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta, and further in view of Satapati should be reversed.....	20
	F. The rejection of claim 20 under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta, and further in view of Wiryaman should be reversed.....	21
	G. The rejection of claim 22 under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta, and further in view of Li should be reversed.....	22
(8)	Conclusion .....	24
(9)	Claim Appendix .....	25
(10)	Evidence Appendix .....	31
(11)	Related Proceedings Appendix.....	32

**(1) Real Party in Interest**

The real party in interest is Hewlett-Packard Development Company, L.P.

**(2) Related Appeals and Interferences**

The Appellant is unaware of any appeals or interferences related to this case.

**(3) Status of Claims**

Claims 1-23 are pending in the present application and stand rejected.

Pursuant to 37 C.F.R. § 41.37, the Appellant hereby appeals the Examiner's decision finally rejecting all of the pending claims to the Board of Patent Appeals and Interferences. Therefore, claims 1-23 of this application are appealed.

**(4) Status of Amendments**

No amendment was filed subsequent to the Final Office Action dated October 1, 2009.

A copy of the claims at issue on appeal is attached as the Claims Appendix.

**(5) Summary of Claimed Subject Matter**

Claims 1, 7, 17 and 23 are the independent claims in this appeal. It should be understood that the citations below to the original disclosure as providing support for the claimed features are merely exemplary and do not limit the claim features to only those citations.

*Independent Claim 1*

Independent claim 1 pertains to a method of load balancing between a plurality of routers by automated resetting of gateways (*specification*, page 4, line 13 through page 6, line 2; flow chart in Figure 2), the method comprising:

receiving a packet at a first router from a source host to be forwarded to a destination host (*specification*, page 4, lines 26-28; block 204 in Figure 2);

identifying a current load on the first router (Router R1 in Figure 1; *Specification*, page 4, lines 18-31);

determining whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router (*specification*, page 4, lines 21-25);

applying an algorithm at the first router to select a second router (Router R2 in Figure 1) to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers (*specification*, page 4, lines 18-31; block 206 in Figure 2); and

sending an ICMP redirect message from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host (*specification*, page 5, lines 13-26; block 208 in Figure 2).

*Independent Claim 7*

Independent claim 7 pertains to an apparatus for routing packets with a load balancing capability involving automated resetting of gateways (*specification*, page 4, line 13 through page 6, line 2; flow chart in Figure 2), the apparatus comprising:

a receiver (Router R1 in Figure 1) configured to receive a packet from a source host to be forward to a destination host (*specification*, page 4, lines 26-28; block 204 in Figure 2);

a selection module configured to identify a current load on the first router (*specification*, page 4, lines 18-31), determine whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router (*specification*, page 4, lines 21-25), apply an algorithm to select another router (Router R2 in Fig. 1) to be a next gateway of the source host for packets destined to the destination host (*specification*, page 4, lines 18-31; block 206 in Figure 2 ); and

a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host to be said other router for packets destined to the destination host (*specification*, page 5, lines 13-26; block 208 in Figure 2).

*Independent Claim 17*

Independent claim 17 pertains to a method of load balancing between a plurality of routers by automated selection of a router to respond to an ARP request (*specification*, page 6, line 3 through page 7, line 30; flow chart in Figure 3), the method comprising:

in a first router (Router R1 in Figure 1), receiving a packet from a requesting host for forwarding via a network (*specification*, page 6, lines 19-20; block 304 in Figure 3), identifying a current load of the first router (*specification*, page 6, lines 11-17), determining whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router (*specification*, page 6, lines 18-21), and transmitting an address resolution protocol (ARP) request to other ones of the plurality of routers in response to a determination that the packet is to be routed by another one of the plurality of routers (*specification*, page 6, lines 18-26);

in the other ones of the plurality of routers (Router R2 in Figure 1), receiving the ARP request from the first router (*specification*, page 6, lines 27-28), performing the automated selection of the router to respond to the ARP request by applying an algorithm at each of the other ones of the plurality of routers to determine which single router is to respond to the ARP request (*specification*, page 6, lines 28-30; block 306 in Figure 3); and

sending an ARP reply from the selected router to the requesting host (*specification*, page 7, lines 18-20; block 308 in Figure 3).

*Independent Claim 23*

Independent claim 23 pertains to a system of load balancing between a plurality of routers involving automated selection of a router to respond to an ARP request (*specification*, page 6, line 3 through page 7, line 30; flow chart in Figure 3), the system comprising:

in each of the plurality of routers (Routers R1 and R2 in Figure 1),

means (Router R1) for receiving a packet from a requesting host for forwarding via a network (*specification*, page 6, lines 18-26);

means (Router R1) for identifying a current load of the plurality of routers (*specification*, page 6, lines 11-17);

means (Router R1) for determining whether the packet is to be routed by another one of the plurality of routers in response to the identified current load (*specification*, page 6, lines 18-21); and

means (Router R1) for transmitting an address resolution protocol (ARP) request to other ones of the plurality of routers in response to a determination that the packet is to be routed by another one of the plurality of routers (*specification*, page 6, lines 18-26);

means (Router R1) for receiving the ARP request from the other ones of the plurality of routers (*specification*, page 6, lines 27-28);

means (Router R1) for performing the automated selection of the router to respond to the ARP request by applying an algorithm at each of the other ones of the plurality of routers to determine which single router is to respond to the ARP request (*specification*, page 6, lines 28-30; block 306 in Figure 3); and

means (Router R1) for sending an ARP reply from the selected router to the requesting host (*specification*, page 7, lines 18-20; block 308 in Figure 3).



**(6) Grounds of Rejection to be Reviewed on Appeal**

A. Whether claim 17 was properly rejected under 35 U.S.C. §112, second paragraph as being indefinite.

B. Whether claims 1, 4, 6, 7 and 13-16 were properly rejected under 35 U.S.C. §103(a) as being unpatentable over Request for Comments (RFC) 792 by J. Postel (hereinafter "Postel") in view of U.S. Patent No. 7,269,143 to Datta (hereinafter "Datta"), and in further view of U.S. Patent No. 5,473,599 to Li et al. (hereinafter "Li").

C. Whether claims 2, 3, and 8-10 were properly rejected under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and in further view of RFC 1256 by S. Deering (herein after "Deering").

D. Whether claims 5, 11, and 12 were properly rejected under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and in further view of U.S. Patent No. 7,010,611 to Wiryaman et al. (hereinafter "Wiryaman").

E. Whether claims 17-19, 21, and 23 were properly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0017775 of Omae et al. (hereinafter "Omae") in view of Datta, and in further view of U.S. Patent Application Publication No. 2004/0215752 of Satapati et al. (hereinafter "Satapati").

F. Whether claim 20 was properly rejected under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta, and in further view of Wiryaman.

G. Whether claim 22 was properly rejected under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta and in further view of Li.

**(7) Arguments****A. The rejection of claim 7 under 35 U.S.C. §112, second paragraph will be corrected upon conclusion of the Appeal.**

Claim 7 was rejected under 35 U.S.C. §112, second paragraph as being indefinite because, as asserted by the Examiner, the term “the first router” in line 5 of independent claim 7 does not have proper antecedent basis. Claim 7 will be amended upon conclusion of the present Appeal and thus, the Board is respectfully requested to hold this rejection in abeyance until this Appeal is concluded.

**B. The rejection of claims 1, 4, 6, 7, and 13-16 under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta, and further in view of Li should be reversed.**

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007):

“Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” Quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, Federal Register, Vol. 72, No. 195, 57526,

57529 (October 10, 2007), once the *Graham* factual inquiries are resolved, there must be a determination of whether the claimed invention would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

(A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

Furthermore, as set forth in *KSR International Co. v. Teleflex Inc.*, quoting from *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006), “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasonings with some rational underpinning to support the legal conclusion of obviousness.”

Furthermore, as set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, “[a]ll claim limitations must be considered” because “all words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385.

If the above-identified criteria and rationales are not met, then the cited references fail to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited references.

- **Claims 1, 4, 6, 7, and 13-16:**

Claims 1, 4, 6, 7, and 13-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li. This rejection should be reversed for at least the following reasons.

- Independent Claim 1:

Independent claim 1 recites, *inter alia*,

applying an algorithm at the first router to select a second router to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers.

Support for the features recited above may be found in the specification, at least on page 4, lines 26-31 and page 5, lines 13-18. Postel in view of Datta and Li fails to teach or suggest at least the claimed features recited in claim 1 above for at least the following reasons.

In the rejection of claim 1, the Examiner concedes that Postel fails to teach or suggest the claimed features recited above (See *Final Office Action*, page 4). The Examiner also asserts that col. 23, lines 35-55 and Fig. 4 of Datta discloses those claimed features. *Id.* However, that assertion is respectfully traversed because the passage in col. 23, lines 35-55 does not teach or suggest applying an algorithm at a first router to select a second router to be a next gateway, as recited in claim 1. Instead, the passage in col. 23, lines 35-55 describes a method for a router

selector 406 in Fig. 4 to select one of the routers 110 (See routers 110 in Fig. 3). More particularly, Datta discloses that the router selector 406 selects one of the routers 110 by using load information 410 of the routers and a load balancing algorithm. Datta also discloses that the load information 410 on which the load balancing algorithm operates is acquired by keeping track of the number and frequency of identifications of routers 110 in SYN packets, or by inquiring individual routers 110 for information about characteristics, such as the number and type of processors used by the router 110, the past and current load on the router 110, and whether the router 110 has been so busy that packets were being dropped.

As such, the passage in col. 23, lines 35-55 of Datta discloses that the router selector 406 uses load information and a load balancing algorithm to select one of the routers 110. However, as shown in Figs. 3 and 4 of Datta, the router selector 406 is located inside the controller 202 which is separate and distinct from the routers 110. In other words, the router selector 406 is not located in one of the routers 110. Thus, the algorithm that the router selector 406 uses to select a router is applied at the router selector 406, and not at a router 110 as the next gateway. In Datta, no algorithm is applied at a router 110 in order to select another router 110. Moreover, the router selector 406 cannot be considered to be a router because it does not route packets. Rather, the router selector 406 is a selector or controller of the routers 110. Therefore, Datta fails to teach or suggest “applying an algorithm at the first router to select a second router to be a next gateway” as recited in independent claim 1.

In addition, in Datta, the router selector 406 selects the next router 110 because that router is identified in a SYN packet (See col. 23, lines 22-36) or because of the load balancing

method (col. 23, lines 37-55). As such, the router selector 406 in Datta does not select the next router “in response to a determination that the packet is to be routed by another one of the plurality of routers,” as recited in claim 1. Therefore, not only does Datta fail to teach or suggest “applying an algorithm at the first router to select a second router to be a next gateway” as discussed above, Datta also fails to teach or suggest “applying an algorithm at the first router to select a second router to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers,” as recited in claim 1.

Furthermore, as discussed above, the router selector 406 of Datta is a selector or controller but not a router because it does not route packets. However, even if the router selector 406 was interpreted as a router, the router selector 406 still cannot be interpreted as the “first router” recited in independent claim 1 because the router selector 406 would not have all the features recited in independent claim 1. More specifically, independent claim 1 recites,

applying an algorithm at the first router to select a second router to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers;

sending an ICMP redirect message from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host.

As such, in independent claim 1, after the first router selects the second router as the next gateway for packets, the first router sends a redirect message to the source host to reset the default gateway, such that the first router is no longer the default gateway for the packets. In contrast, in Datta, if the router selector 406 was interpreted as a router, after the router selector

406 has selected another router 110 to be the next router, the router selector 406 would still be the gateway for packets to go through (See the controller 202 in Fig. 3 in which the router selector 406 resides). As such, the router selector 406 would always be the gateway for a source host to send packets. As a result, the router selector 406 cannot be the “first router” recited in claim 1.

Li is relied upon in the rejection of independent claim 1 because Li discloses a system and method for using a standby router if an active router becomes inoperative (See *Final Office Action*, page 5 and *Li*, col. 16, lines 10-25). However, in setting forth the rejection of independent claim 1, the Examiner has not and cannot reasonably assert that the disclosure contained in Li makes up for any of the deficiencies discussed above with respect to Postel in view of Datta.

Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to modify Postel with the disclosures contained in Datta and Li, the proposed modification would still fail to yield all of the features of independent claim 1.

For at least the foregoing reasons, the Examiner has failed to establish that independent claim 1 is *prima facie* obvious in view of the combined disclosures contained in Postel, Datta, and Li, as proposed by the Examiner. Therefore, reversal of the rejection of independent claim 1 and allowance of this claim is respectfully requested.

o Independent Claim 7:

Independent claim 7 recites, *inter alia*,

An apparatus for routing packets with a load balancing capability involving automated resetting of gateways, the apparatus comprising:

a receiver configured to receive a packet from a source host to be forward to a destination host;

a selection module configured to identify a current load on the first router, determine whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router, apply an algorithm to select another router to be a next gateway of the source host for packets destined to the destination host;

a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host to be said other router for packets destined to the destination host.

Thus, independent claim 7 recites features similar to those recited in claim 1 above. For instance, the apparatus for routing packets claimed in independent claim 7 is equivalent to the first router claimed in independent claim 1. In addition, Datta fails to disclose a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host to be said other router. As such, the router selector 406 in Datta cannot be the claimed apparatus for routing packets for reasons as discussed above with respect to independent claim 1. Therefore, claim 7 is believed to allowable over the cited documents of record for at least the same reasons set forth above with respect to independent claim 1. Thus, reversal of the rejection and allowance of independent claim 7 is respectfully requested.

o Dependent Claims 4, 6, and 13-16:

Claims 4, 6, and 13-16 are dependent from allowable one of independent claims 1 and 7. Therefore, these claims are also believed to be allowable over the cited documents of record for at least the same reasons set forth above with respect to independent claims 1



and 7. Thus, reversal of the rejection and allowance of claims 4, 6, and 13-16 is respectfully requested.

**C. The rejection of claims 2, 3, and 8-10 under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and further in view of Deering should be reversed.**

Claims 2, 3, and 8-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and further in view of Deering. This rejection should be reversed for at least the following reasons.

Claims 2, 3, and 8-10 are dependent from one of independent claims 1 and 7. As discussed above, the proposed combination of Postel in view of Datta and Li fails to disclose all of the features of independent claims 1 and 7. In setting forth the rejection of claims 2, 3, and 8-10, the Examiner has not and cannot reasonably assert that the disclosure contained in Deering makes up for any of the deficiencies with respect to the proposed combination. Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to modify the proposed combination of Postel in view of Datta and Li with the disclosure contained in Deering, the proposed modification would still fail to yield all of the features of independent claims 1 and 7.

For at least the foregoing reasons, the Examiner has failed to establish that claims 2, 3, and 8-10 are *prima facie* obvious in view of the combined disclosures contained in Postel in view of Datta, Li, and Deering, as proposed by the Examiner. Therefore, reversal of the rejection of claims 2, 3, and 8-10 and allowance of these claims are respectfully requested.

**D. The rejection of claims 5, 11, and 12 under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and further in view of Wiryaman should be reversed.**

Claims 5, 11, and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Postel in view of Datta and Li, and further in view of Wiryaman. This rejection should be reversed for at least the following reasons.

Claims 5, 11, and 12 are dependent from one of independent claims 1 and 7. As discussed above, the proposed combination of Postel in view of Datta and Li fails to disclose all of the features of independent claims 1 and 7. In setting forth the rejection of claims 5, 11, and 12, the Examiner has not and cannot reasonably assert that the disclosure contained in Wiryaman makes up for any of the deficiencies with respect to the proposed combination. Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to modify the proposed combination of Postel in view of Datta and Li with the disclosure contained in Wiryaman, the proposed modification would still fail to yield all of the features of independent claims 1 and 7.

For at least the foregoing reasons, the Examiner has failed to establish that claims 5, 11, and 12 are *prima facie* obvious in view of the combined disclosures contained in Postel in view of Datta, Li, and Wiryaman, as proposed by the Examiner. Therefore, reversal of the rejection of claims 5, 11, and 12 and allowance of these claims are respectfully requested.

**E. The rejection of claims 17-19, 21 and 23 under 35 U.S.C. §103(a) as being unpatentable over Omac in view of Datta, and further in view of Satapati should be reversed.**

Claims 17-19, 21 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Omac in view of Datta, and further in view of Satapati. This rejection should be reversed for at least the following reasons.

Independent claim 17 recites, *inter alia*,

in a first router, receiving a packet from a requesting host for forwarding via a network, identifying a current load of the first router, determining whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router, and transmitting an address resolution protocol (ARP) request to other ones of the plurality of routers in response to a determination that the packet is to be routed by another one of the plurality of routers.

Independent claim 23 recites, *inter alia*,

in each of the plurality of routers,

means for receiving a packet from a requesting host for forwarding via a network;

...

means for determining whether the packet is to be routed by another one of the plurality of routers in response to the identified current load; ...

Thus, independent claims 17 and 23 recite features similar to those recited in claim 1 above. As discussed above, Datta fails to disclose all of the features of independent claim 1. In setting forth the rejection of independent claims 17 and 23, the Examiner has not and cannot reasonably assert that the disclosures contained in Omac and Satapati make up for any of the deficiencies with respect to Datta. In fact, in the rejection of claims 17 and 23, the Examiner

**PATENT**

Atty Docket No.: 200313908-1  
App. Ser. No.: 10/633,444

concedes that Omae fails to teach or suggest the claimed features recited above, and uses Datta as the teaching of those features (See *Final Office Action*, page 10). Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to combine Omae, Datta, and Satapati, the proposed combination would still fail to yield all of the features of independent claims 17 and 23.

For at least the foregoing reasons, the Examiner has failed to establish that independent claims 17 and 23 and dependent claims 18, 19, and 21 are *prima facie* obvious in view of the combined disclosures contained in Omae in view of Datta and Satapati, as proposed by the Examiner. Therefore, reversal of the rejection of claims 17-19, 21 and 23 and allowance of these claims are respectfully requested.

**F. The rejection of claim 20 under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta, and further in view of Wiryaman should be reversed.**

Claim 20 was rejected under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta and Wiryaman. This rejection should be reversed for at least the following reasons.

Claim 20 is dependent from independent claim 17. As discussed above, the proposed combination of Omae in view of Datta fails to disclose all of the features of independent claim 17. In setting forth the rejection of claim 20, the Examiner has not and cannot reasonably assert that the disclosure contained in Wiryaman makes up for any of the deficiencies with respect to the proposed combination. Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to modify the proposed combination of Omae

in view of Datta with the disclosure contained in Wiryaman, the proposed modification would still fail to yield all of the features of independent claim 17, from which claim 20 depends.

For at least the foregoing reasons, the Examiner has failed to establish that claim 20 is *prima facie* obvious in view of the combined disclosures contained in Omae, Datta, and Wiryaman, as proposed by the Examiner. Therefore, reversal of the rejection of claim 20 and allowance of this claim is respectfully requested.

**G. The rejection of claim 22 under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta, and further in view of Li should be reversed.**

Claim 22 was rejected under 35 U.S.C. §103(a) as being unpatentable over Omae in view of Datta and Li. This rejection should be reversed for at least the following reasons.

Claim 22 is dependent from independent claim 17. As discussed above, the proposed combination of Omae in view of Datta fails to disclose all of the features of independent claim 17. In setting forth the rejection of claim 22, the Examiner has not and cannot reasonably assert that the disclosure contained in Li makes up for any of the deficiencies with respect to the proposed combination. Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to modify the proposed combination of Omae in view of Datta with the disclosure contained in Li, the proposed modification would still fail to yield all of the features of independent claim 17, from which claim 22 depends.

For at least the foregoing reasons, the Examiner has failed to establish that claim 22 is *prima facie* obvious in view of the combined disclosures contained in Omae, Datta, and Li, as

**PATENT**

Atty Docket No.: 200313908-1

App. Ser. No.: 10/633,444

proposed by the Examiner. Therefore, reversal of the rejection of claim 22 and allowance of this claim is respectfully requested.

**PATENT**

Atty Docket No.: 200313908-1  
App. Ser. No.: 10/633,444

**(8) Conclusion**

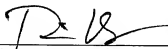
For at least the reasons given above, the rejection of claims 1-23 described above should be reversed and these claims allowed.

Please grant any required extensions of time and charge any fees due in connection with this Appeal Brief to deposit account no. 08-2025.

Respectfully submitted,

Dated: March 4, 2010

By

  
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**(9) Claim Appendix**

1. (Previously Presented) A method of load balancing between a plurality of routers by automated resetting of gateways, the method comprising:  
  
receiving a packet at a first router from a source host to be forwarded to a destination host;  
  
identifying a current load on the first router;  
  
determining whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router;  
  
applying an algorithm at the first router to select a second router to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers; and  
  
sending an ICMP redirect message from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host.
2. (Original) The method of claim 1, wherein the algorithm comprises a pseudo-random algorithm.
3. (Original) The method of claim 1, wherein the algorithm selects the next default gateway using a round robin type selection process.



4. (Previously Presented) The method of claim 1, wherein the algorithm comprises a hash function, wherein an output of the hash function returns an index of a router to be used to route subsequent packets with a same hash value.
5. (Original) The method of claim 4, wherein the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet.
6. (Original) The method of claim 1, wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers.
7. (Previously Presented) An apparatus for routing packets with a load balancing capability involving automated resetting of gateways, the apparatus comprising:
  - a receiver configured to receive a packet from a source host to be forward to a destination host;
  - a selection module configured to identify a current load on the first router, determine whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router, apply an algorithm to select another router to be a next gateway of the source host for packets destined to the destination host; and

a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host to be said other router for packets destined to the destination host.

8. (Original) The apparatus of claim 7, wherein the selection module comprises a pseudo-random number generator.
9. (Original) The apparatus of claim 7, wherein the selection module applies a round-robin type algorithm to select the next gateway.
10. (Original) The apparatus of claim 7, wherein the selection module applies a hash function.
11. (Previously presented) The apparatus of claim 10, wherein the hash function is a function of a source IP address.
12. (Original) The apparatus of claim 10, wherein the hash function is a function of a combination of the source and destination IP addresses.
13. (Original) The apparatus of claim 7, wherein the apparatus is configured to communicate load levels to and receive load levels from other routing apparatus, and wherein the selection module applies a load-based algorithm.

14. (Original) The apparatus of claim 13, wherein the load-based algorithm comprises a weighted hash algorithm.
15. (Original) The apparatus of claim 13, wherein the load-based algorithm comprises a weighted round robin algorithm.
16. (Original) The apparatus of claim 13, wherein the load-based algorithm comprises a pseudo-random algorithm.
17. (Previously Presented) A method of load balancing between a plurality of routers by automated selection of a router to respond to an ARP request, the method comprising:
  - in a first router, receiving a packet from a requesting host for forwarding via a network, identifying a current load of the first router, determining whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router, and transmitting an address resolution protocol (ARP) request to other ones of the plurality of routers in response to a determination that the packet is to be routed by another one of the plurality of routers;
  - in the other ones of the plurality of routers, receiving the ARP request from the first router,

performing the automated selection of the router to respond to the ARP request by  
applying an algorithm at each of the other ones of the plurality of routers to  
determine which single router is to respond to the ARP request; and  
sending an ARP reply from the selected router to the requesting host.

18. (Previously Presented) The method of claim 17, further comprising forwarding a packet from a source IP address to a destination IP address.
19. (Original) The method of claim 17, wherein the algorithm comprises a hash function.
20. (Previously Presented) The method of claim 19, wherein the hash function is a function of a source and a destination IP addresses.
21. (Previously Presented) The method of claim 17, wherein the algorithm determines the selected router using a round robin type selection process.
22. (Original) The method of claim 17, wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers.
23. (Previously Presented) A system of load balancing between a plurality of routers involving automated selection of a router to respond to an ARP request, the system comprising:

in each of the plurality of routers,

means for receiving a packet from a requesting host for forwarding via a network;

means for identifying a current load of the plurality of routers;

means for determining whether the packet is to be routed by another one of the plurality of routers in response to the identified current load; and

means for transmitting an address resolution protocol (ARP) request to other ones of the plurality of routers in response to a determination that the packet is to be routed by another one of the plurality of routers;

means for receiving the ARP request from the other ones of the plurality of routers;

means for performing the automated selection of the router to respond to the ARP request by applying an algorithm at each of the other ones of the plurality of routers to determine which single router is to respond to the ARP request; and

means for sending an ARP reply from the selected router to the requesting host.

**PATENT**

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**(10) Evidence Appendix**

None.

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**(11) Related Proceedings Appendix**

None.